

THAT WHICH IS CLAIMED

1. A cracking die assembly adapted for use in a high production nutcracking apparatus comprising
  - 5 a tubular retainer including an internal bore which includes a rearwardly facing shoulder and a forwardly facing shoulder so that the forwardly facing shoulder opposes said rearwardly facing shoulder in a spaced apart arrangement which defines a cylindrical cavity
  - 10 therebetween having a predetermined diameter, and an annular gasket mounted within the cylindrical cavity, said gasket having an axial dimension which is approximately the same as the distance between said shoulders so as to be retained therebetween, and said
  - 15 gasket having an outer diameter which is less than the predetermined diameter of said cylindrical cavity so as to define a space therebetween which allows the gasket to radially expand upon being impacted in the axial direction.
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2. The cracking die assembly of Claim 1 wherein said retainer includes a forward end face and a rearward end face and so that the portion of said internal bore of said retainer extending between said forwardly facing shoulder and said rearward end face defines a generally cylindrical rearward bore portion of a predetermined axial length, and wherein said gasket has a rearwardly facing end surface which extends radially inwardly with respect to said rearward bore portion.
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3. The cracking die assembly of Claim 2 further comprising a cracking die disposed coaxially within said internal bore of said retainer and including a radial flange disposed within said rearward bore portion and

having an axial dimension less than that of said rearward bore portion, with said radial flange defining a forwardly facing shoulder which opposes and is adapted to engage said rearwardly facing end surface of said gasket.

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4. The cracking die assembly of Claim 3 wherein said rearwardly facing end surface of said gasket and said forwardly facing shoulder of said die include opposed portions which are generally perpendicular to a central axis defined by the retainer.

10 5. The cracking die assembly of Claim 3 wherein said rearwardly facing end surface of said gasket and said forwardly facing shoulder of said die include opposed conical portions which are inclined at an angle of inclination of between about 30° and 60° with respect to a central axis defined by the retainer.

15 6. The cracking die assembly of Claim 3 wherein said cracking die includes a cylindrical portion which extends forwardly from said forwardly facing shoulder and through said annular gasket, and wherein said gasket includes an annular sealing lip which engages said cylindrical portion of said die.

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7. The cracking die assembly of Claim 6 wherein said cylindrical portion of said cracking die includes a forward end face which is configured to engage the end of a nut to be cracked, and an opposite rearward end face, whereby said cracking die is adapted to be impacted on said rearward end face and be sharply thrust forward a limited distance so as to impart a cracking force to a nut engaged by said forward end face of said die, and with the shoulder of the cracking die engaging the

rearwardly facing end face of said gasket so that the annular gasket expands radially into said space and absorbs at least a portion of the impacting force.

5        8. The cracking die assembly of Claim 7 further comprising a mounting sleeve having an internal bore which includes a forwardly facing shoulder intermediate its ends, and wherein said tubular retainer is mounted within said bore with the rearward end face of the  
10      retainer in engagement with said forwardly facing shoulder of said mounting sleeve.

15        9. The cracking die assembly of Claim 8 wherein said retainer is removeably mounted in said sleeve bore by means of cooperating threads, and wherein said forward end face of said cracking die includes a concave depression for receiving an end portion of a nut to be cracked.

20        10. The cracking die assembly of Claim 1 wherein said annular gasket consists essentially of urethane plastic.

25        11. In a nutcracking apparatus comprising a cracking die having a forward end face and a rearward end face, an anvil mounted opposite said forward end face of said die to define an opening therebetween which is adapted to receive a nut, means mounting said cracking die for limited movement toward and away from said  
30      opening, means mounting said anvil for limited movement toward and away from said opening and for biasing said anvil in a direction toward said opening so that a nut may be retained between said anvil and said cracking die, a free floating shuttle mounted rearwardly of said

cracking die, and means for periodically sharply thrusting said shuttle forwardly into impacting engagement with said rearward end face of said cracking die such that a nut retained between said anvil and said cracking die will be cracked by the resulting forward movement of the cracking die, the improvement wherein said cracking die is included in a cracking die assembly which comprises

10 a mounting sleeve having an internal bore which defines a central axis and which includes a forwardly facing radial shoulder intermediate its ends,

15 a tubular retainer mounted within said bore of said sleeve forwardly of said shoulder, with said retainer including an internal bore which includes a rearwardly facing shoulder and a forwardly facing shoulder so that the forwardly facing shoulder opposes said rearwardly facing shoulder in a spaced apart arrangement which defines a cylindrical cavity therebetween having a predetermined diameter,

20 an annular gasket mounted within the cylindrical cavity, said gasket having an axial dimension which is approximately the same as the distance between said shoulders of said retainer so as to be retained therebetween, said gasket having a rearwardly facing end 25 surface which extends radially into the internal bore of said retainer, and said gasket further having an outer diameter which is less than the predetermined diameter of said cylindrical cavity so as to define a space therebetween which allows the gasket to radially expand 30 upon being impacted in the axial direction,

said cracking die being disposed coaxially within said internal bore of said retainer and including a radial flange disposed between said sleeve shoulder and said rearwardly facing end surface of said gasket, with

5       said flange having an axial dimension less than the distance between said sleeve shoulder and said rearwardly facing end surface of said gasket for permitting limited axial movement of said die, and with said flange of said die defining a forwardly facing shoulder which opposes and is adapted to engage the rearwardly facing end surface of said gasket.

10       12. The cracking die assembly of Claim 11 wherein said rearwardly facing end surface of said gasket and said forwardly facing shoulder of said die include opposed portions which are generally perpendicular to the central axis defined by the retainer.

15       13. The cracking die assembly of Claim 11 wherein said rearwardly facing end surface of said gasket and said forwardly facing shoulder of said die include opposed conical portions which are inclined at an angle of inclination of between about 30° and 60° with respect 20       to the central axis defined by the retainer.